

REMARKS

The present application was filed on August 5, 2003 with claims 1 through 30. Claims 10 and 16 were cancelled, without prejudice, in the Amendment and Response to Office Action dated February 25, 2005. Claim 31 was added in the Supplemental Amendment dated April 27, 2005. Claims 1-9, 11-15, and 17-31 are presently pending in the above-identified patent application.

Independent claims 1, 21, 30 and 31 are amended herein. Support for the amendments to claims 1, 21, 30 and 31 may be found, for example, in the specification on page 6, lines 15-22.

In the Office Action, the Examiner rejected claims 1-31 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 6,506,497 issued to Kennedy et al. (hereinafter "Kennedy") in view of Svejda et al. (6,767,930, hereinafter "Svejda") or Feher (Gelest Inc article) and U.S. Patent No. 6,521,699 issued to Feder et al. (hereinafter "Feder").

Independent Claims 1, 21, 30 and 31

Independent claims 1, 21, 30, and 31 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Kennedy in view of Svejda or Feher and Feder. Regarding claim 1, the Examiner acknowledges that Kennedy fails to specifically mention a cross-linking agent, and fails to disclose a specific compound meeting the instant claim limitations. See page 4, first paragraph, of the instant Action. The Examiner asserts, however, that Feher discloses 3D polyhedral oligosilsequioxane polymers that aid in crosslinking and "appear to meet the instant claim limitations." See page 4, second paragraph, of the instant Action. The Examiner also states that Svejda discloses a polyhedral oligosilsequioxane polymer that is employed as a porosity control agent, and thermal and oxidative stability aids to improve the properties of the polymers they are added to. See page 4, third paragraph, of the instant Action.

The Examiner further asserts that Feder discloses a layer similar to that of Kennedy and teaches that polysilsequioxane compositions conventionally comprise cross-linking agents. See page 4, fifth paragraph, of the instant Action.

The Examiner states that "it would have been obvious to one of ordinary skill in the art to prepare the material of Kennedy et al. in view of Feher or Svejda choosing to employ a cross-linking agent with reasonable expectation of achieving a material able to form a pattern having small features."

Page 4, fourth paragraph, through page 5, of the instant Action.

As amended, independent claims 1, 21, 30 and 31 require one or more of a crosslinking

component and an acid generator, wherein the crosslinking component comprises at least one of an epoxide and an alcohol. Examiner has noted that the Feder reference teaches the use of cross-linking agents. However, the cross-linking agents disclosed in Feder consist of resin. For example, in column 3, lines 44-47 of the Feder reference, it is stated that

5 this patent application recommends . . . the use of resins with alkoxyolated, or even acetoxylated or oximated siloxyl units MD or MDT

Further, in column 12, lines 29-35 of the Feder reference, it is stated that

10 a cross-linking agent (E), preferably consisting of at least one hydroxylated silicon resin having, per molecule, at least two different siloxyl units chosen from those of the M, D, T and Q type, at least one being a T or a Q; the resins of the MQ, MDQ, TD and MDT type being particularly preferred

Consequently, because the Feder reference discloses crosslinking agents consisting of resins, 15 Feder does not teach or suggest the use of a crosslinking component comprises at least one of an epoxide and an alcohol. Furthermore, the Examiner has already stated that Kennedy fails to teach the use of a cross-linking agent, and Feher and Svejda merely deal with the formula of the polymer (wherein n is preferably 8). Therefore, Applicants submit that the noted references, even if properly combined, do not teach or suggest all of the claim limitations. To establish *prima facie* obviousness of 20 a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

Also, independent claims 1, 21, 30, and 31 require a fully condensed polyhedral oligosilsesquioxane, $\{\text{RSiO}_{1.5}\}_n$, wherein n equals 8, at least one chromophore moiety and transparent moiety, and one or more of a crosslinking component and an acid generator, wherein the crosslinking 25 component comprises at least one of an epoxide and an alcohol for use as an antireflective hardmask composition. Applicants note that the Feder reference is directed to silicone compositions used as putty or sealing materials (see column 1, lines 6-9), whereas Kennedy and Svejda are directed to integrated circuit devices and electronic component designs (see, column 2, lines 44-45, and column 1, line 61, respectively).

30 Therefore, Applicants submit that there is no motivation to properly combine the references, as the references deal with inherently different problems and are taught within distinctly separate contexts. "There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998). The level of skill in the art

cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp v VSI Int'l Inc*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999).

Thus, Kennedy in view of Svejda or Feher and Feder, alone or in combination, do not disclose or suggest a fully condensed polyhedral oligosilsesquioxane, $\{\text{RSiO}_{1.5}\}_n$, wherein n equals 8, at least one chromophore moiety and transparent moiety, and one or more of a crosslinking component and an acid generator, wherein the crosslinking component comprises at least one of an epoxide and an alcohol, as required by independent claims 1, 21, 30, and 31. Further, there is no motivation to properly combine the references.

Dependent Claims 2-9, 11-15, 17-20 and 22-29

Dependent claims 2-9, 11-15, 17-20, and 22-29 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Kennedy in view of Svejda or Feher and Feder.

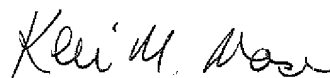
Claims 2-9, 11-15, and 17-20, and claims 22-29 are dependent on claims 1 and 21, respectively, and are therefore patentably distinguished over Kennedy in view of Svejda or Feher and Feder (alone or in any combination) because of their dependency from independent claims 1 and 21 for the reasons set forth above, as well as other elements these claims add in combination to their base claim.

Applicants respectfully submit that all of the pending claims, i.e., claims 1-9, 11-15, and 17-31, are in condition for allowance and such favorable action is earnestly solicited.

If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Examiner is invited to contact the undersigned at the telephone number indicated below.

The Examiner's attention to this matter is appreciated.

Respectfully submitted,



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